

## **ANALYSIS OF PRODUCTION AND ECONOMIC INDICATORS OF BEER MANUFACTURE IN ARMENIA**

**Armen GRIGORYAN**

ASUE, Chair of IER, Degree Seeking Applicant

**Anna PARSYAM**

ANAU, Chair of AMP, PhD in Economics

**Suren PARSYAN**

Chair of Microeconomics, Associate Professor, ASUE

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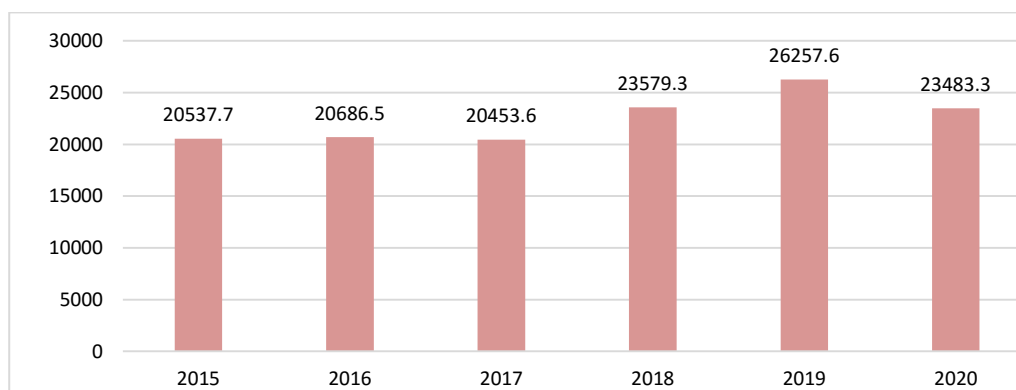
**Introduction.** Beer is one of the oldest and most consumed alcoholic drinks and is considered to be the third widespread beverage after water and tea. Beer is produced from cereals, via starch fermentation. Mainly barley malt is used, nevertheless, wheat, maize and rice are also widely applied throughout its production. Beer is mostly flavored with hop, which adds bitterness and serves as a natural conservant, though other supplements like herbal plants and fruits can be also used. Brewing is a global business, which consists of some dominant international companies and thousands of small manufacturers. The alcohol content per its volume makes 4-6% but in some cases it can fluctuate within 0.5-20%, while some factories produce beer with 40% and even more strength.

**Methodology.** For the processing and application of information retrieved throughout the research work, as well as for the study of production and economic indices of beer manufacturing companies of the RA, dialectic, economic and statistical, scientific research, as well as analytical and comparative methods have been used. The economic and production indicators of the RA beer producing companies have been considered in the scope of mutual relationships.

**Literature review.** Beer manufacturing industry in Armenia started still from ancient times. The first brewery in Armenia was opened in 1892 in Yerevan. It was known as “Zanga” beer production factory and was situated at the Hrazdan riverbank. The factory used to produce beer under “Bock” brand. It was closed in 1920. It is also known that for high quality beer production the beer raw stuff (barley) was imported from Kars region, while hop was brought from Poland; above all these, fresh water of the most famous Yerevan spring called “Krbulagh” was used. Contemporaries attest that the beer of “Zanga” brewery was endowed with amazing taste properties. The product of the mentioned factory was considered as the best one not only within the borders of South Caucasus but it was also in great demand in the Russian cities and even in Europe, where during the expos organized in Rome and Naples, in 1910, the Yerevan beer won the highest prizes. Barley is the raw material for beer production, from which malt is produced. Hop and hop flowers also serve as ancillary materials. The high properties of

barley malt are related to the soil and climatic conditions. In the Shirak, Lori, Gegharkunik and Syunik regions of Armenia barley endowed with high biochemical and physiological properties is grown. There are some technological requirements for barley cultivation which consists namely in that its moisture content shouldn't exceed 15 %, the protein content shouldn't surpass 9-11 %; it should have high extraction properties, while the starch content should be low. The low extraction properties increase the raw material costs per a product unit causing extra expenses [Matevosyan, 2000, 109/-110]. Malt is produced in the Gyumri Beer-Malt Factory CJSC (10 thousand tons annually). It is also imported from Germany, Hungary, Belgium and UK. There is a need to increase the production sizes of local barley, and consequently malt production sizes as well. It is also necessary to regulate the production and economic contractual relations between the raw material producing and processing organizations [Mamikonyan, 2013, 282-284].

One of the main objectives of processing economic entities is not only to increase the capacity of raw material base but also to ensure its efficient use in the production process. The rational use of raw material reduces its demand at economic level and increases the overall efficiency. The efficiency of raw material application is evaluated via generalizing and partially analytical indices. The generalizing indicators describe the total amount of the product manufactured per a raw material unit and the material requirement for the product. Whereas, the norm of raw material spent per the unit of a specific product is already the analytical index [Mamikonyan, et al., 2004, 54].



**Figure 1.** Beer production in the RA for 2015-2020 years, by volume, thousand liters

According to the results of the RA national statistical data, 2021, 11 enterprises were actively engaged in the entrepreneurial activities of the beer manufacturing sector among which Yerevan, Gyumri, Kotayk, Sevan breweries, Hayasy Group, as well as Ginevan and Dilijan breweries are distinguished. Their overall production capacities averagely make 150 000 liters of beer annually, while the staff number of industrial and production personnel makes about 994 employees. Each economic system is based on

the equilibrium of economic and social efficiency. Market social trend implies meeting the growing and changing needs of people, human resource development and coexistence of different ownership forms. Beer manufacturing is the steady cornerstone of beverage industry in Armenia. Figure 1 presents the beer products sizes manufactured by the breweries of Armenia in physical terms (by volume). In 2015-2017, the companies recorded a sustainable production growth with slight deviation observed in 2018, when compared to 2017, it exceeded by 13.3% and in 2019 – by 22.1%. Nevertheless, in 2020, the beer production sector has also demonstrated downturn in the economic indicators. Compared to 2019 year, in 2020 the beer production sizes in the Republic of Armenia were reduced by 11.8 % related to the pandemic and war conditions.

**Scientific novelty.** The conducted investigations and analyses have entailed to the results among which the comprehensive study and analysis of the beer manufacturing sector of the Republic of Armenia and the comparative analysis of the dynamics in production and economic indicators, such as beer production sizes, export and import indices can be considered as the scientific novelty of the current work.

**Analysis.** Beer, like other alcoholic drinks, is a product taxable through the excise taxes. Excise tax is an indirect tax type which is calculated and paid for the import of goods as regulated by law or for their alienation by the manufacturers in the territory of Armenia. Excise tax is a state tax paid to the state budget for transactions (operations) related to the objects of excise tax, in the manner, amount and within the time limits determined by the relevant Code rule. It is determined through the excise taxation base per the products quantity (volume) expressed in natural units, using excise tariffs. The excise duty rate on beer product (product code is 2203 according to FEACN) for 2020 made 130 drams per liter, in 2021 it was 133.9 drams, in 2022 – 137.8 drams, while in 2023 it is 141. 7 drams [RA Law on Excise Tax, 2020]. Throughout the analysis of the activities of the RA beer manufacturing companies the entrepreneurial risks of economic entities engaged in this sector should be particularly emphasized. The beer manufacturers are faced with all types of entrepreneurial risks. The latter have problems in the procedures of barley importation, which is the raw material base for beer production and in the development of reserves. Some reasons for the entrepreneurial risks of the RA beer producing companies are the unfavorable fluctuations between the products' demand and supply, increase in the wholesale prices, as well as growth in the prices of food and non-food products, utility services, force majeure circumstances (pandemic, war in the Republic of Armenia and its consequences, the political and economic situation in the region), variations in the ruble exchange rate, etc. [Hayrapetyan, 2015, 36-39]. According to national statistics, in 2015-2019 the industrial production sizes of the beverage products in Armenia increased, while in 2020, compared to 2019, production decline by 11.6 % was recorded. Different beverages, including beer, manufactured in Armenia

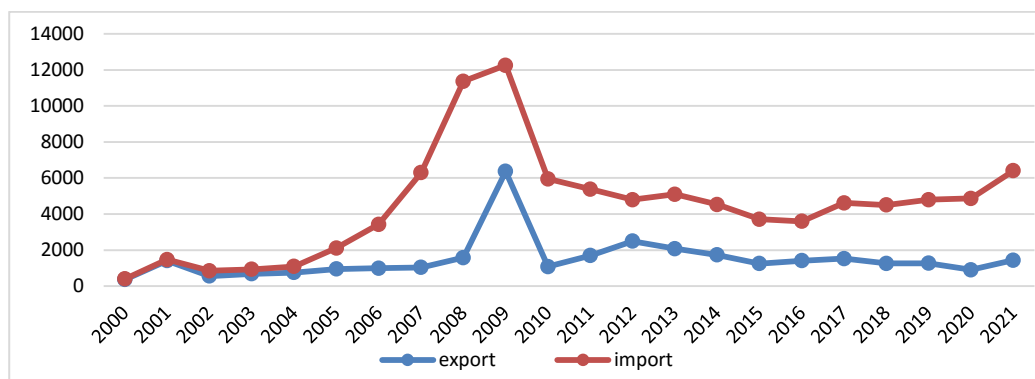
have been exported for sale in EAEU countries since 2018. In 2019, the industrial production of the beverages manufactured in the RA made 184.6 bln drams in the current prices, 10.5 bln of which (5.7 %) accounted for the share of beer production. In 2020, the output production costs of the drinks in the RA was equal to 163.1 bln drams in the current prices, 9.2 billion of which (5.6 %) were allocated for beer production.

**Table 1.** Economic indices of the beverage and beer production in the RA for 2015-2020

	2015	2016	2017	2018	2019	2020
The industrial production size of beverages in the RA in the current prices, billion drams	110,9	102,7	149,2	152,6	184,6	163,1
The sale of output products of beverages in current year prices (billion drams), including	110,6	103	150,9	156,5	186,3	162,3
In CIS countries	53,6	43,4	80,9	78,5	92,9	86,8
EAEU countries	-	-	-	70,8	92,8	80,2
Other countries	13,1	9,9	14,1	15,1	21,3	21,6
The industrial production size of the RA beer products in current prices, billion drams	7,4	8	8,1	9,3	10,5	9,2
The sale of beer output products in the current year prices (billion drams), including	7,3	7,9	7,7	9,4	10,7	9,4
In CIS countries	0,77	0,68	0,85	0,79	0,86	0,75
EAEU countries	-	-	-	0,77	0,85	0,76
Other countries	0,16	0,19	0,17	0,18	0,22	0,23

The economic indices introduced in Table 1 show that beer production has its steady share in the RA beverage manufacturing sector [The key indicators, 2016, 2017, 14-15, 2018, 2019, 18-19, 2020, 2021, 16-18]. Throughout 2000-2009 the export and import of Armenian beer products increased in arithmetic progression. Anyhow, in 2009 - 2010 the volumes sharply decreased related to the world economic crisis; the mentioned indices recorded for 2020-2021 years demonstrated relative stability.

**Figure 2.** The import and export for the Armenian beer in 2000-2021, thousand USD



To reduce the import sizes of food products, the problems related to the increase of competitiveness and quality of the products manufactured in the processing branches, as well as those related to the improvement of product appearance and implementation of wholesale market program, should be handled.

**Table 2.** The self-sufficiency level of the Armenian beer in 2017-2020 and the share of local product in the sale system, %

Indicator	2017	2018	2019	2020
Self-sufficiency level of beer product	88.9	88.6	88.7	88.6
Share of local product in the sale system	80.5	83.2	83.7	81.2

In view of the world practice, the analysis of the population's self-sufficiency level in respect with food and non-food products is one of the prior measures to address the safety issue of the country. The data research indicates that the self-sufficiency level of Armenian beer products throughout 2017-2020 years makes 88.7 % on the average, while in the sale system the share of local product makes 82.2 % [Food Safety, 2017].

**Conclusion.** Thus, beer production holds an important position in the RA food and processing industry. Up to date no comprehensive research work concerning the entrepreneurial activities of the RA beer manufacturing companies has been implemented and the current issues of the mentioned branch haven't been identified properly yet; hence, the relevance and urgency of the current article and the selected topic is justified.

Beer is a low-alcohol beverage with 5000 years' history. It passes through Babylon and ancient Egypt coming up to Europe. Nevertheless, previously beer used to have sweet taste, since no hop was applied then. The modern beer aficionado has the opportunity to choose and enjoy dozens of beer types. It is remarkable that even millennia ago, mankind was already familiar with several types of beer [Petrochenkov A., 2003]. It would be definitely interesting to study sound and specific historical data about brewing. For the first time, in 1585, Thaddeus Hagecius described beer production procedure in his book "An Ancient Technical Essay on Brewing" [Gabikh G., 2012, 352 p.]. Armenia is also one of the ancient countries engaged in beer production. The activities in this sector root back to the 4th century B.C., when the leader of Greek mercenaries Xenophon, passing through our territory, enjoyed the "strange beverage" produced from barley and mentioned about it in his proceedings. The contemporary world is full of different beer varieties.

The data of the RA national statistical committee evidence that during 2000-2020 years more than dozens of beer manufacturing Armenian and foreign companies were actively engaged in the entrepreneurial activities in beer production sector. Beverage production sector, beer production, in particular, possesses a non-fluctuated share in the whole industrial structure of the RA. Beer production is one of the sustainably developing branch in the RA processing industry. This specific beverage produced from barley has been manufactured and consumed for thousands of years in Armenia.

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Among the factors justifying the research relevance and urgency, the RA beer market, extreme imbalance of the resources, raw material and varieties for their complementation, the millennial history and traditional technologies of brewing, development trends of beer import and export sizes and other key factors have been investigated. The relevance of the topic is underpinned by the steady-state share of industrial beer product volume in the total industrial beverage product range of the RA (in 2018 - 6.1 %, in 2019 - 5.7 %, in 2020 - 5.6%). The entrepreneurial activities of beer producing organizations are not only of economic but also of social significance for the country, since multiple jobs have been created and the unemployment has been reduced to a certain extent. Beer manufacturing methodology and the historical survey of the first Armenian brewery, as well as some of beer producing companies in the RA per the data of 2021 have been introduced. Studies related to the beverage, particularly beer production sizes and its comparative analysis have been conducted. The share of beverage production in the overall industrial output of the RA has been indicated and the specific weight of beer manufacture in the structure of beverage production has been estimated. Besides, the RA beer export and import processes, its self-sufficiency level and share of domestic product in the sales system have been studied.

***References***

1. RA Excise Tax Law, Date of Entering into Force 01.01.2020, <https://www.petekamutner.am>.
2. The key indicators of industrial organizations according to the five-digit classification of economic activities, January-December 2016, 2017, pp. 14-15, January-December 2018, 2019, pp. 18-19, January-December, 2020, 2021, pp 16-18, <https://www.armstat.am>.
3. Food Safety, Official Website of the RA Ministry of Economy, <https://www.mineconomy.am/page/1333>.
4. Hayrapetyan L., Commercial Risk, ASUE, Yerevan 2015, pp. 36-39.
5. Matevosyan A., Gyulkhasyan M. Plant Growing, Yerevan 2000, pp. 109-110.
6. Mamikonyan H., Babayan E., Issues of Efficient Use of Raw Material Resources of the RA Food Industry, Yerevan 2004, p. 54.
7. Mamikonyan H., Economics of Food Industry, ANAU, Yerevan 2013, pp. 282-284.
8. Gabikh G., Practical Guide to Brewing, Brewing Technique, 2012, 352 p.
9. Petrochenkov A., Beer and Spirits, Guidebook, 2003.